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10/509,757	09/30/2004	Yuichi Terada	DK-US020721	8137

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GLOBAL IP COUNSELORS, LLP  
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WASHINGTON, DC 20036-2680

EXAMINER
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CORRIGAN, JOSEPH JAMES

ART UNIT	PAPER NUMBER
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3744

MAIL DATE	DELIVERY MODE
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09/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/509,757	Applicant(s) TERADA, YUICHI	
	Examiner joseph corrigan	Art Unit 3709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/30/04, and 7/10/06</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for claiming ventilation fan in both claims 4 and 5. Applicant should succinctly define whether one or more ventilation fans are being claimed, or if claim dependency needs to be addressed. As stated in MPEP 2173.05 (o) regarding **double inclusion**, "...where a claim directed to a device can be read to include the same element twice, the claim may be indefinite. Ex parte Kristensen, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989)." It is in the opinion of the examiner that applicant should respond to this query.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

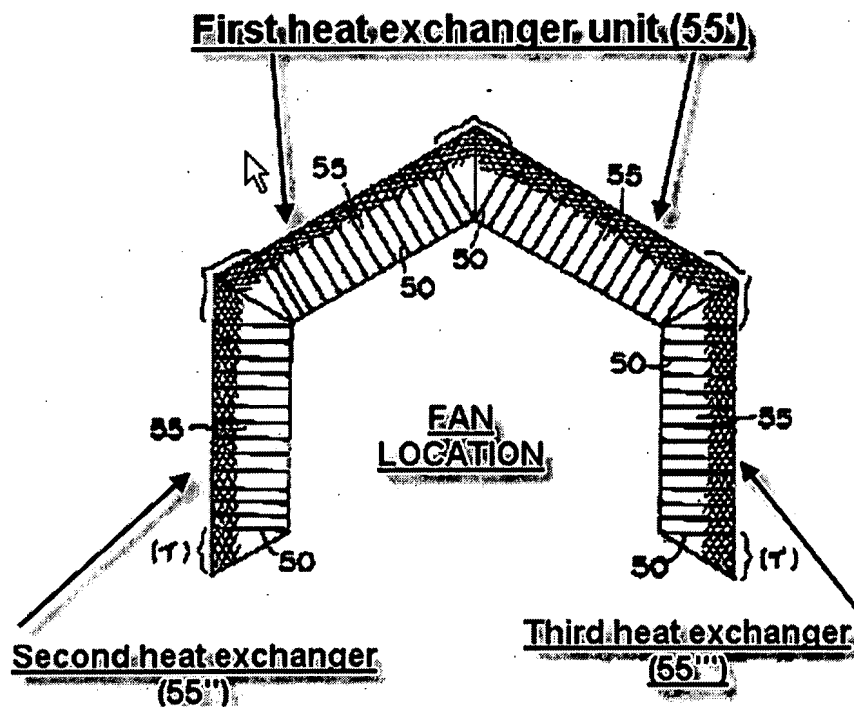
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita et al JP-06/094256.

## **Yamashita et al JP-06/094256 Figure 14**

5. In re claim 1, Yamashita et al '256 discloses a heat exchanger (3) formed to be connected to a plurality of heat exchange units (55, figure 8), and which is disposed in an indoor unit of an air conditioner (1') comprising:

- a first heat exchange unit (55');
- second heat exchange unit (55'') that is connected at an angle with one end of the first heat exchange unit (55');
- a third heat exchange unit (55''') that is connected at an angle with another end of the first heat exchange unit (55');
- the second heat exchange unit (55'') and the third heat exchange unit (55''') have approximately the same length.



**Yamashita et al JP-06/094256 Figure 8**

Please note that examiner inserted reference numbers 55', 55'', and 55''' (and written descriptions) to further clarify components in prior art drawing.

6. In re claim 2, Yamashita et al '256 discloses the heat exchanger disclosed in claim 1,
  - the first heat exchange (55') unit has an approximate inverted V shape in cross-section ( see figure 8);

Art Unit: 3709

- the second heat exchange (55'') unit and the third heat exchange unit (55''') respectively extend downward from front and rear lower ends of the first heat exchange unit (55').

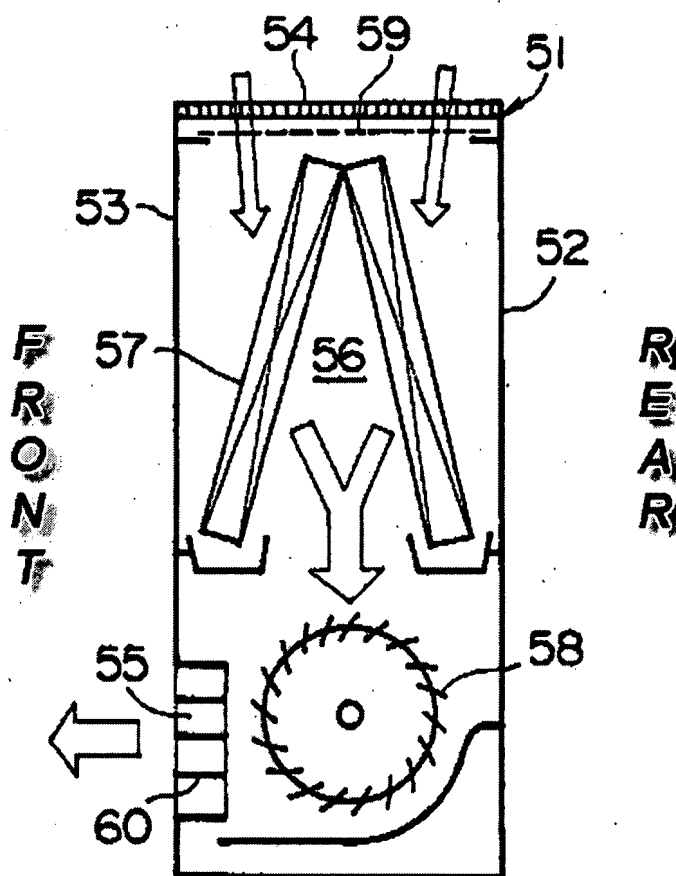
7. In re claim 3, Yamashita et al '256 discloses invention above and further discloses the heat exchanger (55, figure 8) is symmetrical from front to rear, and the second heat exchange unit (55'') and the third heat exchange unit (55''') are symmetrical from front to rear. (See figure 8)

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**FIG. 5**  
**(PRIOR ART)**



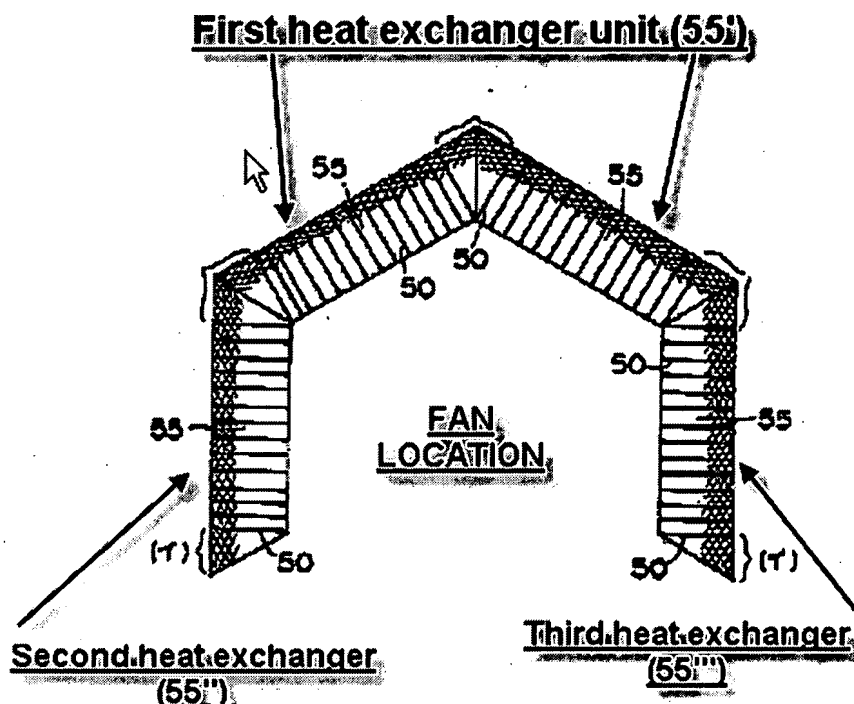
**Asami et al '5,575,326' Figure 5**

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al '5,575,326' in view of Yamashita et al '256.

Art Unit: 3709

10. In re claim 1, Asami et al '326 discloses an indoor unit of an air conditioner comprising of:

- a first heat exchange unit (57);



### Yamashita et al JP-06/094256 Figure 8

11. Please note that examiner inserted reference numbers 55', 55'', and 55''' (and written descriptions) to further clarify components in prior art drawing.

12. However, Asami et al '326 fails to disclose (figure 5 above):



Art Unit: 3709

- second heat exchange unit that is connected at an angle with one end of the first heat exchange unit;
- and a third heat exchange unit that is connected at an angle with another end of the first heat exchange unit;
- the second heat exchange unit and the third heat exchange unit have approximately the same length.

13. Nevertheless, Yamashita et al '256 discloses (See figure 8 below):

- first heat exchange unit (55');
- second heat exchange unit (55'') that is connected at an angle with one end of the first heat exchange unit (55');
- a third heat exchange unit (55''') that is connected at an angle with another end of the first heat exchange unit (55');
- the second heat exchange unit (55'') and the third heat exchange unit (55''') have approximately the same length.

14. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Asami et al '326 with Yamashita et al '256 to create heat exchanger with more cooling surface area providing increased cooling capability without increasing unit size.

Art Unit: 3709

15. In re claim 2, Asami et al '326 and Yamashita et al '256 disclose invention above and Yamashita et al '256 further discloses:

- the first heat exchange (55') unit has an approximate inverted V shape in cross-section; (See figure 8 above)
- the second heat exchange (55'') unit and the third heat exchange unit (55''') respectively extend downward from front and rear lower ends of the first heat exchange unit (55').

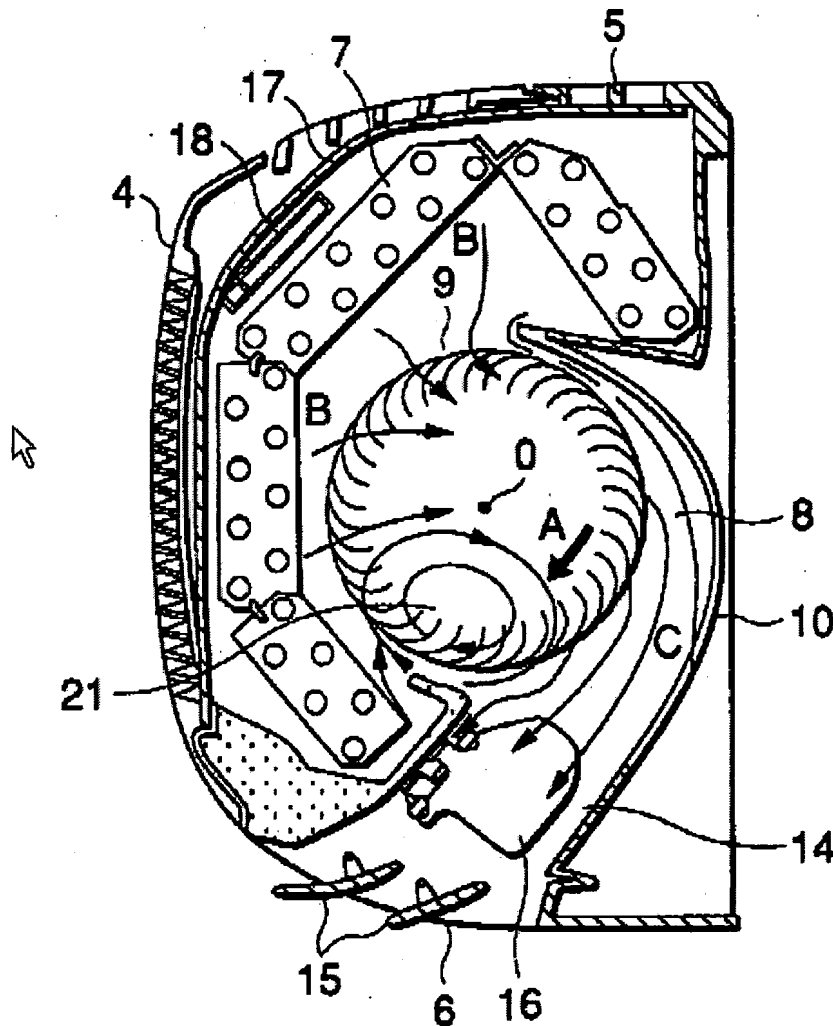
16. In re claim 3, Asami et al '326 and Yamashita et al '256 disclose invention above and Yamashita et al '256 further discloses the heat exchanger is symmetrical from front to rear, and the second heat exchange unit (55'') and the third heat exchange unit (55''') are symmetrical from front to rear. (see figure 8)

17. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al '5,575,326' and Yamashita et al 'JP-06/94256' as applied to claim 1 above, and further in view of Ikeda et al '6,086,324'.

18. In re claim 4, Asami et al '326 and Yamashita et al '256 disclose invention above, and Asami et al '326 further disclose use of ventilation fan (58), figure 5. However, Asami fails to disclose an orientation of fan with respect to heat exchanger.

Art Unit: 3709

19. Nevertheless, Ikeda et al '324 teaches special orientation of ventilation fan ( Asami '326, (55), figure 5) with respect to heat exchanger (55, Yamashita et al '256, figure 8) is disposed so as to be **covered**.



**Ikeda et al '6,086,324' Figure 2**

20. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Asami et al '326 and Yamashita et al '256 with Ikeda et al

Art Unit: 3709

'324 to fit fan tightly in and around heat exchanger to gain heightened pressure to maximize air flow.

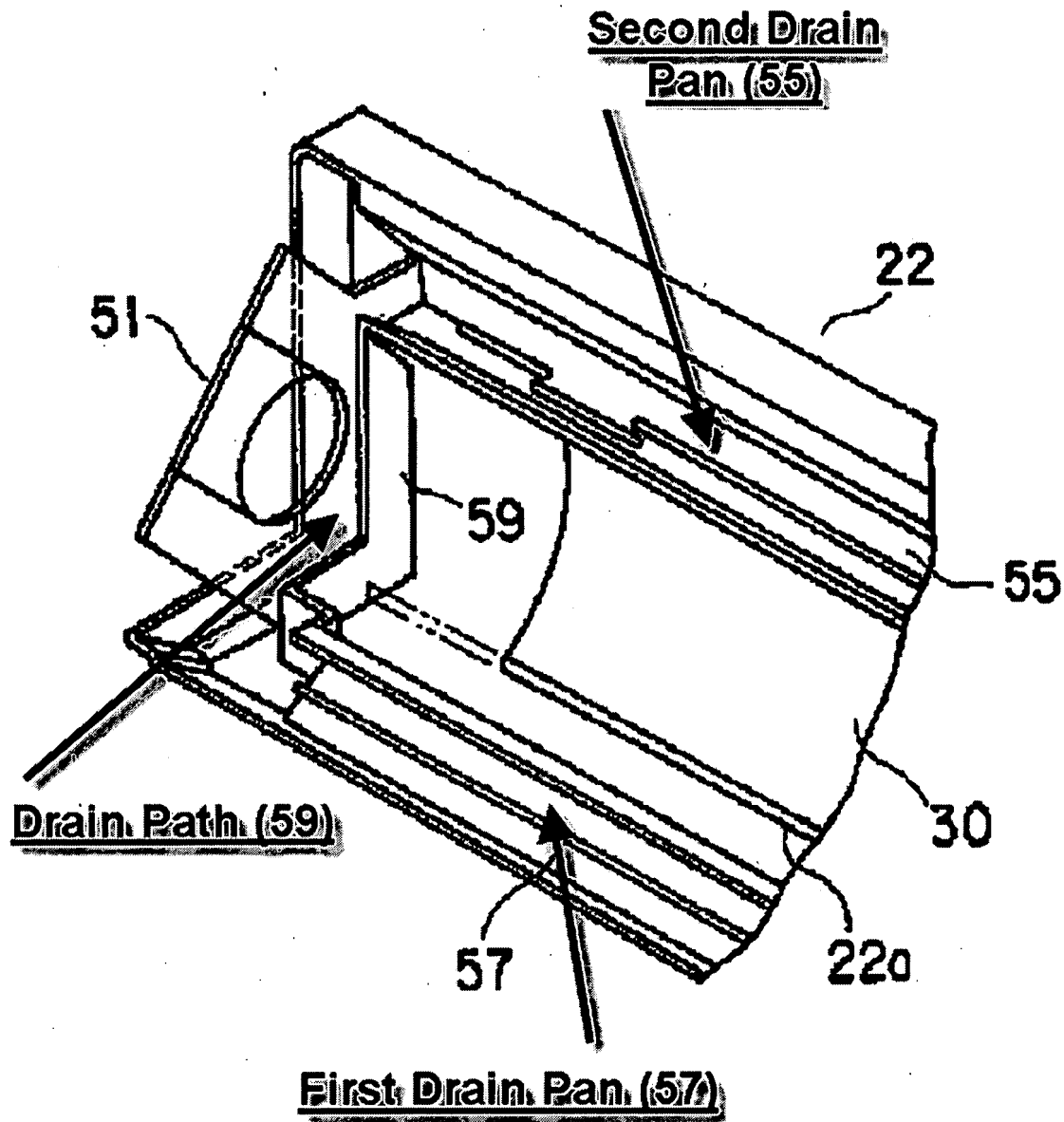
21. Claim 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al '5,575,326', Yamashita et al 'JP-06/94256' and Ikeda et al '6,086,324' as applied to claim 4 above, and further in view of Sato 'JP-2001/141256A'.

22. In re claim 5, Asami et al '326, Yamashita et al '256 and Ikeda et al '324 disclose invention above, and Ikeda et al '324 further teaches heat exchanger (55, Yamashita et al '256, figure 8) that covers front, upper and rear portions of the ventilation fan (Asami '326, (55), figure 5), and is disposed so that a lower front end and a lower rear end of the heat exchanger are at a height of an apex of the ventilation fan or lower. (See Ikeda et al '324, figure 2).

23. However, Asami et al '326, Yamashita et al '256 and Ikeda et al '324 fail to disclose:

- a first drain pan that is disposed below the lower front end of the heat exchanger; a second drain pan that is disposed below the lower rear end of the heat exchanger;
- a drain path through which drain water discharged from the first drain pan and the second drain pan passes;
- the first drain pan and the second drain pan are disposed at a same approximate height.

Art Unit: 3709



**Sato JP-2001/141256A Figure 5B**

24. Nevertheless, Sato et al '256 discloses:

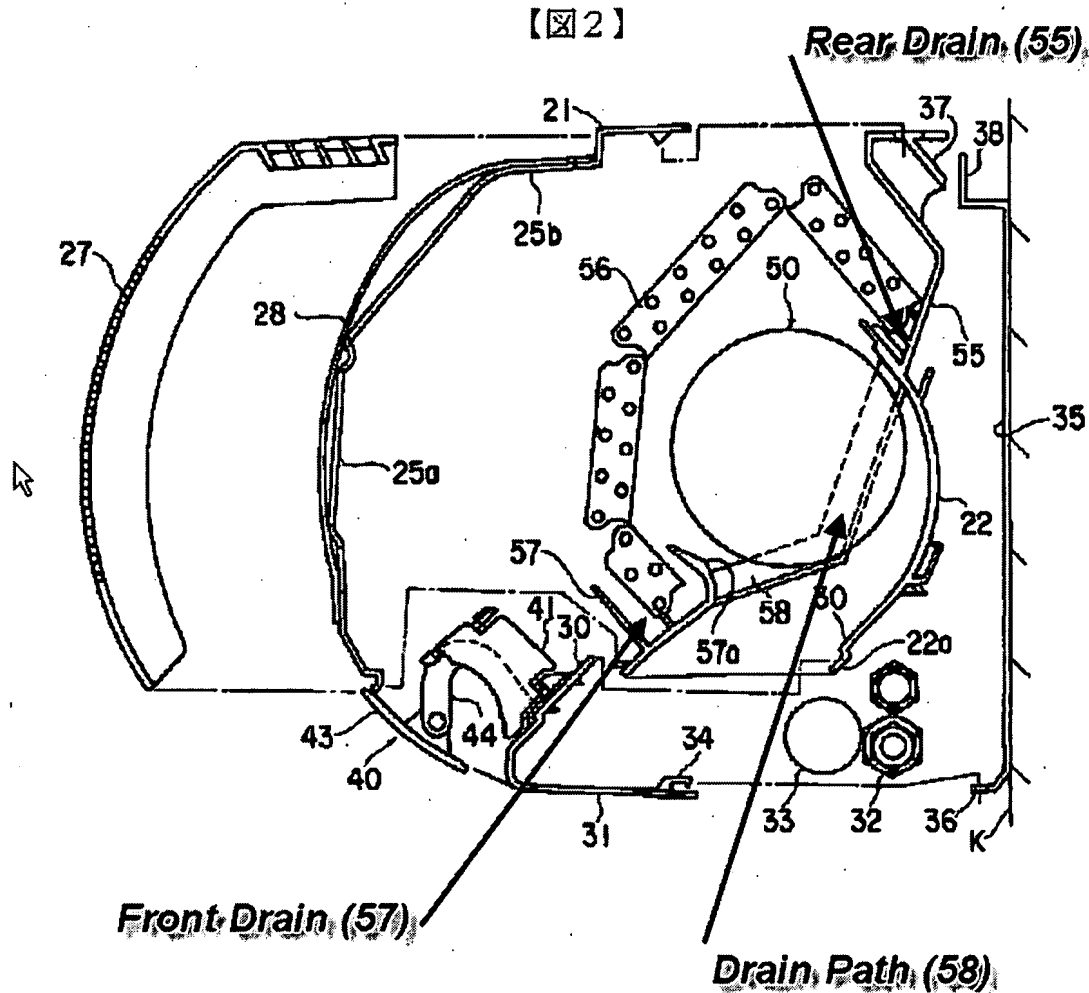
- a first drain pan (57) that is disposed below the lower front end of the heat exchanger; a second drain pan (55) that is disposed below the lower rear end of the heat exchanger (56);

Art Unit: 3709

- a drain path (59) through which drain water discharged from the first drain pan (57) and the second drain pan (55) passes;
- the first drain pan and the second drain pan are disposed at a same approximate height.

25. In the spirit of clarity it should be noted that the 35 USC 103 (a) rejection uses base reference Asami et al '326 depicting apparatus with terminal straight edges in front and rear of heat exchanger at same approximate height. Sato et al '256 drain pan teaching applied to Asami structure will not alter heat exchanger orientation where open "V" faces level ground resulting in "same height" limitation being met.

Art Unit: 3709



**JP-2001/141256A Figure 2**

26. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Asami et al '326, Yamashita et al '256 and Ikeda et al '324 with Sato et al '256 to introduce integral drain assembly reducing vibration related leak issues.

Art Unit: 3709

27. In re claim 6, Asami et al '326, Yamashita et al '256 and Ikeda et al '324 disclose invention above, and Yamashita et al '256 further discloses the heat exchanger has an approximate inverted V shape in cross-section. (See figure 8, Yamashita)

28. In re claim 7, Asami et al '326, Yamashita et al '256 and Ikeda et al '324 disclose invention above, and Asami et al '326 further discloses lower front end and the lower rear end of the heat exchanger (57) are positioned at a same approximate height. (See Asami '326, figure 5)

29. In re claim 8, Asami et al '326, Yamashita et al '256 and Ikeda et al '324 disclose invention above, and Yamashita et al '256 further discloses heat exchanger (55) has a shape that is symmetrical from front to rear. (See figure 8, Yamashita above)

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **US 5,575,326** discloses a indoor air-conditioning unit that features heat exchanger with inverted "V" shape similar to invention herein. **JP-2001/141256** discloses a drain pan tray feature disposed below cross flow blower similar to invention herein. **US 6,086,324** features a cross flow blower that is almost encapsulated by heat



Art Unit: 3709

exchanger. **JP 2001-153387** discloses a cooling device with curved heat exchangers similar to invention herein. **US 5,205,484** discloses a cooling system with arcuate heat exchanger as detailed in applicants design. **JP-06/94256** discloses a heat exchanger with inverted "V" shape made of four segments similar to invention herein. **US 2002/0144513** discloses an air conditioning unit that features similar drain pan technique as invention herein. **JP-01260241** discloses a basic air conditioning unit designed with cross flow blower similar to invention herein. **JP-2000-88269** discloses a level drain pan below cross flow blower similar to invention herein except for the use of two blowers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph J. Corrigan whose telephone number is 571-270-3213. The examiner can normally be reached on 7:30-5:00.

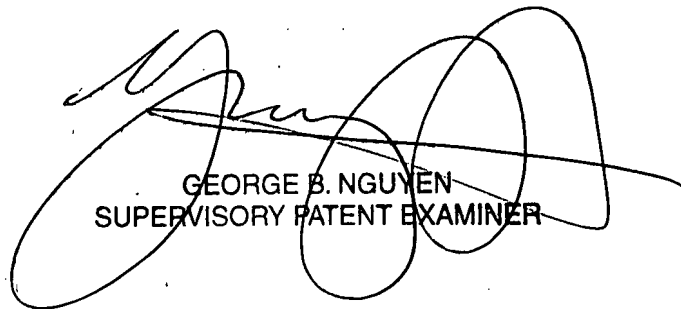
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3709

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph J Corrigan  
Examiner  
Art Unit 3744

9



GEORGE B. NGUYEN  
SUPERVISORY PATENT EXAMINER